Report of Cases Treated by a Modified Bier-Klapp Method of Passive Hyperemia

Read before the Medical Society of the County of Albany, November 7, 1906

By JAMES N. VANDER VEER, M. D.

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Mr. President and Gentlemen:

I wish to present this evening, before the members of the Society, a report of cases treated by the so-called Bier-Klapp method. This method is in reality an improved form of cupping, utilizing our present-day knowledge of bacteriology and pathology as its basis.

The method, of itself, is quite simple, requiring an incision to be made in the majority of cases, and following this, the application of a cupping apparatus. The cups utilized by Professor Bier and his assistant, Dr. Rudolf Klapp, are of various sizes and designs.

In order to give systematic arrangement to the paper, I present it under four heads, as follows:

(1) Those conditions in which the method of treatment is especially indicated,

(2) Outline of treatment.

(3) Reports of cases,

(4) Display of the apparatus used.

Under the first heading, I would especially call your attention to a condition which the general practitioner is almost daily called upon to treat—a furuncle—simple at first and more complicated as progressive stages are reached.

If we refer to volume 1, 1905 edition of the International Text-book of Surgery, we are enabled to gain quickly a knowledge of the formation of a furuncle. One of the paragraphs reads as follows:

"A boil or furuncle is caused by an invasion of bacteria either through the hair follicle or sudoriparous glands to a deeper portion of the skin or to the subcutaneous cellular tissue. The active growth of the organism is sufficiently extensive in this case to produce a coagulation-necrosis of appreciable size, which subsequently forms the 'core' of the boil. The part most frequently destroyed is the hair follicle with its accompanying sebaceous gland. The first appearance of a boil is the appearance of a minute pustule situated at the opening of a hair follicle.

Its presence is first noticed on account of an itching sensation which it causes. This is soon followed by an infiltration of the skin which finally extends to subcutaneous cellular tissue. A crust forms on the site of the papule, and on removing this *a small quantity of pus escapes.* On introducing a fine probe, it is found to enter to a small depth. This boil continues to enlarge for a day or two, and the opening is now sharply defined and circular, and is sufficiently large to enable the pus to escape freely. Finally, pressure extrudes a small slough and the inflammation begins to subside, the opening contracts and the minute abscess eventually heals by granulation."

And further, "a carbuncle is a suppurative and gangrenous inflammation of the skin and the subcutaneous cellular tissue, and spreads gradually downward and laterally into the subcutaneous tissue."

The formation of the abscess is the carrying of this process but one step further, as we see by referring to Nancrede's Principles of Surgery, 1905:

"In an abscess, the virulent infection ends in the death of the cells of the focus and their conversion into pus, and the intense surrounding hyperemia results in such an outpouring of exudates that the still-living tissues have their nutriment *mechanically* diminished, producing a lowering of vitality, which renders them an easy prey to the multiplying germs.

"The pressure under which pus exists forces into the surrounding tissues toxic substances destructive to the cell, or so lowering their vitality that fresh soil for new crops of microorganisms is prepared.

"Clearly, then, evacuation of the pus will remove only a portion of the germs and their toxic products, but the relief from pressure also effected will prevent the dissemination of bacterial poisons, and will relieve the strangulations of the tissues, which prevents proper nutrition, thus enabling them to cope with the germs left behind.

"Thus, although the germs in the still living tissues; i. e., the chief morbid condition, cannot directly be attacked, the evacuation of the germs contained in the pus and the relief of tension will remove many of their worst effects and enable the tissues to not only protect themselves against further invasion but also to destroy those germs already present."


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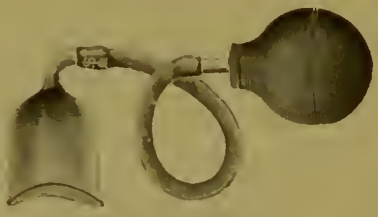
To Illustrate Dr. James N. Vander Veer's Article on "Report of Cases Treated by a Modified Bier-Klapp Method of Passive Hyperemia."

Albany Medical Annals December, 1906.

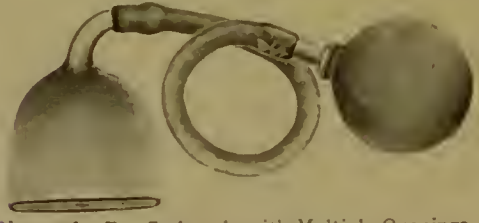
No. 112—For Furuncle of the Lip



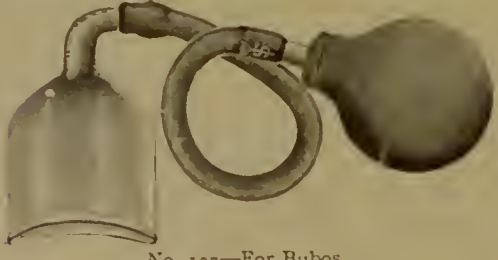
No. 110—For Furuncle of Great Prominence.

No. 120—For Furuncle of Broad Base.

No. 126—For Furuncle where Curved Rim is necessary. (Most useful).



No. 120½—For Carbuncle with Multiple Openings.



No. 127—For Bubos.

By courtesy of The Kny-Scheerer Co., New York.

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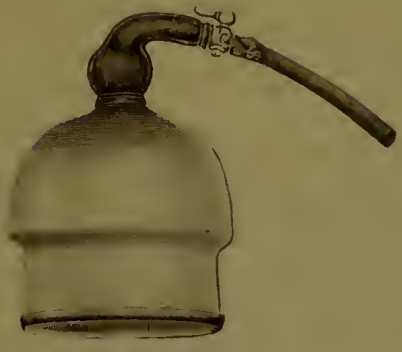
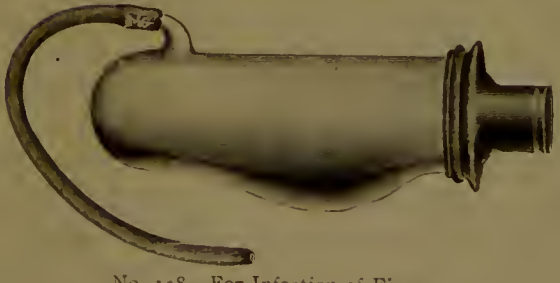
Albany Medical Annals, December, 1906.

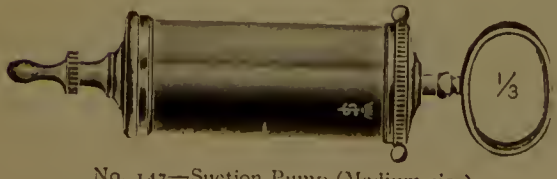
No. 130½—For Furuncle of the Back or Trunk.



No. 132—For Large Abscess.



No. 138—For Infection of Finger. (Most useful).



No. 147—Suction Pump (Medium size).

By courtesy of The Knox Scheerer Co., New York.

Again, and secondly, the practitioner is often consulted concerning the small granulating surface of an abrasion, and asked if it is not possible to hurry the process. If he adopts the usual line of treatment there will be recourse to salves, powders and balsams, whereas by aiding the pathological process of repair in such cases (in other words, increasing the blood flow to the part) nutriment in abundance can be furnished to the impaired surface.

In a third class of cases, we are asked to prescribe for an acute infection before it has reached the stage of abscess, and yet where we note a violent systemic reaction. Did we yield to our teaching of earlier days, our patient would be subjected to the poultice, ice or ichthyol treatment with supporting stimulation. In this class of cases I beg you to note the strong ally furnished to the affected part in helping the blood to do an increased amount of work, that help which nature is trying to furnish, but as in the antitoxin treatment, cannot furnish quickly enough.

Again, in the International Text-book of Surgery, we note under "Local Infection":

"The organisms which are most commonly found in these conditions are known as the pyogenic organisms. They produce chemical changes in the tissue by the formation of a toxic substance or poison. The substances exert a peptonizing action upon the cells of the part and cause a coagulation-necrosis or death of the tissues in the immediate neighborhood for a group of microbes, and bring about in the surrounding tissues a reaction which softens them and changes them into pus. In this way the affected area is separated from the rest of the body, and when pus escapes the products of disease are discharged with it. Under less favorable conditions the reaction is less effective, the organisms continue to spread in the surrounding parts, and although suppuration may take place, the walls of the suppurating cavity contain bacteria which are still in active growth and are invading new regions."

A fourth class of cases where this method is of great advantage is in the after-treatment of surgical operations, especially in infected fields or where the field of operation becomes infected. Here do we find our old plan of packing a drainage tube or perhaps of ever using a drainage tube at all superseded, for from clinical experience we know that gauze eventually becomes a

hindrance rather than a help in a richly suppurating wound, and a drainage tube may give a postoperative hernia.

Under this subject of secondary infection, I would call your attention to the fact that the aim of the surgeon is to eliminate these pus-organisms as quickly as possible, because of the devitalized condition of the tissues after the existing surgical condition. How simple a matter now to pump out the detritus and thus aid nature in strengthening the part, rather than to depend on nature to do it all.

And now for the application of the treatment.

As originally suggested by Professor Bier and his assistant, Dr. Rudolf Klapp, in the Surgical Clinic of the University of Bonn, each treatment lasts for forty minutes, is utilized once a day and the application is as follows:

A small linear incision is made through the apex of the inflamed area and a cup is applied for five minutes, with a suction just strong enough to avoid the painful degree. To facilitate suction, some sterile vaseline or ointment (preferably zinc oxide) is applied to the area just around and beneath the rim of the cup. At this first suction following the incision a large amount of pus and sero-sanguineo-purulent material is withdrawn. The cup is then removed for three minutes, and again reapplied for five minutes, thus alternating throughout the forty minutes. The wound and the area are then dressed with a simple ointment and sterile dressings, and the patient sent home to return the next day.

It will be noted that this method of procedure has caused the following phenomena:

(1) Continuous drainage is established for the area, and there has been no curetting or probing or disturbance of the protective wall of leucocytes in process of forming.

(2) The physiological and pathological phenomena are:

(*a*) The current in the arteries, arterioles and capillaries is first quickened.

(*b*) Then comes a slight retardation of the current, with an increase in intravascular pressure, distension and thinning of the vessel wall.

(*c*) An extravasation of blood serum, with possibly a dialysis between the serum in the vessel and that outside of the vessel, thus hastening the process of liquefaction of the necrotic elements.

(*d*) An exudation of white and red corpuscles, especially of the former, in great abundance, thus hastening nature's efforts to deposit a protective army at the point most needed.

Occasionally the Bier-Stauungs method of light constriction is also utilized to good advantage, especially where an extremity is involved.

In the treatment of the cases reported in this article there has been a slight modification, and the procedure has been, in general, after this manner:—

So soon as the inflamed region was made out, an incision about one-quarter to one-half an inch in length was made through the most prominent portion, down to and through the deep fascia, into the infected area. The proper sized cup was then applied, using zinc oxide ointment as a cohesive, for a period of five minutes only, followed by a hot pack of bichloride of mercury (1-10,000). The hot pack was changed every hour, and for five minutes between each change the cup was used for the first three hours and then three times daily. There was also utilized a tonic treatment as deemed appropriate.

No packing or probing of the wound was indulged in, and save as a necrotic bit of tissue required removal, no manipulation of the interior of the wound was attempted. Irrigations were also dispensed with, for fear of destroying the protective membrane, and contrary to reason, the incised wound did not close up entirely, while healing took place rapidly and by granulation.

After the incising of the inflamed area, and the first application of the cup, the patients, one and all, remarked at the peculiarly agreeable sensation felt here, and were eager to make the application themselves more frequently. In each case where the lesion was accessible the patient was taught how to apply the cup, as he (or she) was the only one to judge when the painful point was reached.

Each cup was sterilized by boiling immediately before and after using, thus preventing any mixing of infections in the different cases.

Temperature, high pulse, nausea and headache, and in one case, the vomiting, were rapidly alleviated, following the incision and the first cup application, even though no pus was obtained until later.

In a case where pus was demonstrable macroscopically from

the first, the discharge usually ended after forty-eight to sixty hours, but organisms were obtainable, by culture, even to the last, usually changing from the mixed type at first, to a single type in the end, and this of the staphylococcus group.

I judge that the mode of growth of this group tends to crowd out and destroy the other organisms, for the staphylococcus group causes a localized inflammation and one within a well-defined area, when nature has asserted herself strongly.

I now present to you the reports of ten cases, divided as follows:

Two cases of infected finger;

Two cases of typical furuncle, one of the axillary region, and one of the breast:

Two cases of furuncle of the neck, each very extensive in character;

Four cases of acute perforated and gangrenous appendices, two of which were sewed up tight at the time of the usual operation, and subsequently developed phlegmons, and two of which where the abdomen was simply opened and a glass drainage tube introduced, and no attempt made to remove the appendix.

Of these ten cases, nine recovered completely, and one, Dr. W., died forty-eight hours after seeing him, from a previously existing cirrhotic liver, a parenchymatous nephritis, with over 5% albumen, and chronic alcoholism.

All ten were markedly benefited following the cup application, and in nine, the convalescent period was reduced by over half the time.

CASE NO. 1.

Miss C., nurse, aged 28, gives a history of having scratched her right forefinger on a pin, some five days ago, while pinning up the bandage of an infected case. Has attempted to treat the resultant condition herself, by means of hot-packs at night and constant bichloride baths by day; but because of the pain running through her right arm and shoulder, has been obliged to seek surgical interference.

Examination shows the right forefinger enlarged, between the second and the third phalanges, to twice the size of the left one. There is a hard induration on the palmar and outer aspect about the size of a copper-penny. No fluctuation is present. A well-marked lymphangitis, with soreness, extends up the forearm almost to the elbow. There is a stiffness of the wrist and elbow, and the axillary region is sore, but no glands are palpable. Temperature, 100°; pulse, 90, full and bounding; some headache; loss of appetite and sleeplessness.

A slight incision was made over the radial aspect of the finger, where the area seemed to be most indurated, and the finger-cup was applied in the usual manner, with the extraction of no pus, but some blood serum. There was also applied the bandage lightly around the arm for periods of four hours at a time. The cupping was continued with hot-packs for thirty-six hours, when the nurse returned to duty, having a normal temperature and pulse, no headache and a slight soreness in the finger. The other symptoms of infection had also disappeared. Cup was then applied for the next thirty-six hours, three times daily, and the wound healed with a scar the size of a pinhead only. This is a case which was not treated from the very beginning, and probably would have gone on to a severe consequence.

Case No. 2.

E. J., aged 24, has carried two false arms for a number of years, having received a crush of the right arm necessitating an amputation at the elbow, and of the left hand, so that only the thumb and the forefinger are left.

Patient experiences about three times a year an irritation of the parts concerned, due to the rubbing of the false hand; and following this irritation, if neglected, there always appears a severe infection involving the arm and giving other systemic symptoms.

The patient has been treated for the last ten days with hot-packs, following one of the periodical attacks of infection. The focus lies to the ulnar side and at the base of the thumb-nail; it has been opened twice. A suggestion having been made that the Bier apparatus be used, no new opening was made, but the apparatus was applied, and after a use of four days, coupled with cold to the axilla and heat to the forearm, great relief was obtained. Here also a bandage was used on the forearm. The patient made an excellent recovery in five days' time, and resumed his normal occupation.

Case No. 3.

Dr. W. T. has experienced for some two years past a crop of furuncles. They seem to attack especially his right axilla, but one very persistent one was situated over the left infra-maxillary region. Patient presents an indurated surface of a size slightly smaller than the palm of one's hand, and with a raised area the size of a hickory nut in its very center. This infiltrated area is situated on the inner and axillary aspect of the right arm and is exceedingly painful to touch, as well as giving exceeding torture on movement of the shoulder. The glands in the axilla are distinctly palpable and very tender. No other enlarged glands are ascertained upon physical examination.

The Bier treatment was suggested and acceded to, and a slight incision one-half inch long and a half-inch deep, under ethyl chloride, was made over the prominent portion of the area. No pus was obtained, but the center of induration was decidedly necrotic, and small shreds could be removed by means of the thumb-forceps. No packing or irrigation of this area was allowed, the suggestion being made that hot-packs be applied as often as possible and the suction apparatus be used between each application. There was instant relief following the first application of

the cup, but quite some pain was experienced by reason of using a cup whose rim area was too small. After thirty-six hours, the hot-packs were discontinued, as well as the cupping, and the wound closed within the next twenty-four hours.

The remark was made concerning this case, by the patient, that he had never seen enlarged glands disappear so quickly, as well as the accompanying soreness, as they did here about the twelfth hour after the application of the Bier cup.

Case No. 4.

Mrs. McC. Diagnosis: Abscess of left breast.

Patient gave history of having her right breast removed some eight weeks previous, in a neighboring hospital, for carcinoma, and says that the present condition developed about one week after, and it is now about one week since her departure from the hospital.

The abscess tended to point just beneath and internal to the left nipple, and was about the size of a hen's egg, very hard and tense in consistency. It was very painful to touch, but there was no enlargement of the axillary region, though this region was tender. The right breast scar was entirely healed, and gave evidence of having done so by first intention.

A small incision one-half an inch in length was made down to and through the deep fascia and directly into the abscess cavity, when about two ounces of pus were evacuated. The Bier cup was applied, together with hot-packs, for forty-eight hours, followed with a cold bichloride pack, and the application of the cup three times a day. At the end of the fourth day the patient left the hospital and went to her home, where the cup was abandoned and the wound simply dressed with a cold bichloride pack.

In this case there was a slight slough in the very center of the incision, which was removed by means of the thumb-forceps; and it would seem as if the cup had hastened the separation of it; for, following its removal, the pus ceased to be produced and a clean and healthy granular surface was presented.

Of all patients, this was the most nervous when the cup was being applied, and yet, after the first application, she welcomed it most cordially.

The scar remaining in her case was very small in size, and the relief afforded in not packing the cavity or irrigating it as frequently as would have been done under the old lines of treatment was appreciated by her.

Case No. 5.

Mr. L. T., a superintendent of construction, presented himself with a large furuncle on the back of his neck. His past is negative, save that he has had one furuncle near the same spot some years ago, which was lanced, packed and irrigated in the usual manner.

About four weeks ago (June 10th) he noticed a little pimple on the back of his neck. This he picked with a pin, after which it grew steadily worse. Since then he has been poulticing his neck. He experienced severe pains when he lay down at night, but very little when he sat up. On Monday evening, June 18th, furnucle was lanced while

patient was on a trip through Canada. Considerable pus was evaeuated and the pain abated somewhat. Two days later, however, the pain recommeneed, and he was eompelled to seek further surgieal advice.

The patient presented on the baek of his neck an indurated area of some three and one-half inches in diameter, very painful to touch, and in the center were two parallel ineisions about one and one-half inehes long. These led down to an inside sloughing mass whieh diseharged a sero-purulent material. The probe sank into the mass for a distanee of about one and one-half inches. There was no enlargement of the glands. The patient's temperature was 101°; his pulse, 80.

Cups were applied in this case for twenty minutes at a time, every three hours, in the routine of five minutes on and three minutes off. Zinc ointment was well rubbed into the area surrounding the ineision, so far as the patient eould bear the applieation, and a flaxseed poultiee was applied till the following morning, followed by hot bichloride packs (1-10,000). It became neeessary to lessen the applieation of the cups, by reason of the gangrenous appearance of the edges of the wound, and they were applied only onee a day. The patient was given a eathartic (and put upon a tonie eontaining iron) and the temperature immediately dropped, following a good evaeuation of the bowels. There was no restriction as to diet, and upon the fourth day a slough was removed through one of the ineisions, leaving a hole the size of a horse chestnut. This seemed to be a eomplieation in the case eontrary to desires. An irrigation of diluted nitric aeid twice daily was ordered.

The patient was diseharged from the hospital on the 29th, but for the last four days had been attending to his business downtown, simply going baek to the hospital for the Bier treatment and the dressing of the wound. At the end of the second week, or on August 6th, the very last of the wound had closed, leaving a parallel scar about one-quarter inch in length, but with no deformity or eontraction of the tissue beneath as yet.

The patient has been seen frequently sinee that time, and remarks at the ease and simplicity utilized in this manner of treatment as compared with previous experienees with abscesses.

Case No. 6.

Dr. W. A., aged 65, has suffered for six weeks with a furuncle on the back of his neek, and when I saw him the furuncle extended from one pinna of the ear to the opposite side, and in vertieal aspeet was four inches or more in size. The area in the center was slightly honey-eombed, and led one to suspeet a eondition of actinomycosis. It was very painful to touch. The glands in the axilla were very tender, as well as those in the infra-elavicular region. On both sides, behind and beneath the ear, was a protruding area the size of a pigeon's egg, which fluetuated upon handling. In the eenter of the wound, about this honey-combed area, there was a bogginess differing decidedly from the hard indurated feeling of the remainder of the mass, and whieh, upon pressure, yielded a thick pus from the openings.

The patient's past history was one of chronic alcoholism, together with many severe accidents experienced during the last few years, and he

showed an extreme condition of nephritis, there having been about five per cent of albumen in a specimen voided at entrance. He was slightly delirious, but could be recalled to himself, and had a temperature of 102°, with a pulse of 120.

It was realized that this was a severe case, and it was suggested that the Bier treatment be tried, together with hot-packs, to which the patient acceded, and under ethyl chloride an incision one and one-half inches long and three-quarters of an inch deep was made in the abscess under the left ear, which yielded about an ounce of pus, and a similar vertical incision was also made in the center of the neck, but this did not yield much pus, although the scalpel passed through the deeply infiltrated and sloughing area. For the next twenty-four hours the process of cupping was adhered to, and was abandoned because of the delirium of the patient and his point-blank refusal to have anything done. During this time, however, the hot-packs yielded fair results. Under coercion the cups were again allowed to be applied, and from the abscess on the left at least two ounces were obtained, while from the abscess in the center of the neck shreds of tissue, as well as a sanguino-purulent material, were withdrawn. In the meanwhile the patient was given a supporting treatment consisting in the main of whiskey in very small doses, together with quinine, but he gradually passed into a state of delirium with excitement, and died some four days after entrance to the hospital. This is the first case where the success has not been as great as could have been hoped for, and yet the adverse conditions of the patient in a large measure seemed to gainsay any hope for his ultimate recovery.

Case No. 7.

W. L., bookkeeper, taken ill some two weeks ago with a pain which settled in the right lower quadrant, had the typical symptoms of appendicitis, and his physician ordered an ice-pack applied. On the third day there was an exacerbation, and the patient kept to his bed until the tenth day, when he took a short walk, and on the next day began to have such severe pain that the physician was again called, when a diagnosis of perforated appendix was made. The usual operation was performed, and a condition of gangrenous appendicitis was proven and the concretion which had caused the trouble was found. But the location of the appendix precluded its removal entirely, and the wound was closed with silkwormgut sutures, there being one glass tube and one vaginal tampon left in as drainage. Patient did well for three days, when he developed some pain in the right side, mostly gaseous in character. Manipulation of tube to facilitate drainage, the same as usual in such cases, was tried, with no result. On the fourth day the right side above the wound was very sensitive to the touch, and on the sixth day the wound began to discharge a very foul-smelling pus, following up the loosening of three of the silkwormgut stitches. After this the hot bichloride packs were utilized, and the wound was irrigated with boracic acid and various other solutions, but seemed disinclined to fill in, as a small fistula was persistent. On the eighteenth day the Bier apparatus was applied, using it twice daily, and on the 28th day the patient was discharged from the hospital with no evidences of latent condition remaining.

During this time a comparison was furnished very nicely by a brother practitioner, who treated his patient under exactly the same conditions, by means of irrigations and hot-packs, and which patient remained in the hospital some two weeks after the discharge of W. L. A close comparison of the cases showed that they were as nearly similar as could be obtained in surgical lines.

Case No. 8.

Mr. C. J., an examiner, has been perfectly well until three days ago, when he was taken with severe pains in his abdomen, and these finally localized in thirty-six hours, when a diagnosis of appendicitis was made by his attending physician, and an operation was acceded to. Blood count showed an increasing leucocytosis, even following the removal of a completely gangrenous appendix, and where no adhesions existed. Drainage was instituted and the wound was closed with silkwormgut sutures, which had to be removed at the end of the third day. Drainage continued to be enormous until the sixteenth day, when the Bier apparatus was suggested, and was utilized four times daily at first, with a result of sanguino-purulent material of fecal odor, followed later by decreasing amounts. This patient was finally treated twice daily in this manner for two weeks before dismissal, and seemed to be an especially hard one to handle. However, at the end of the month in the hospital he was discharged, with no fecal fistula or sinus remaining.

Case No. 9.

Mrs. H., a very fleshy woman, was seen Sunday morning, taken immediately to the hospital, where she was operated upon, and a gangrenous appendix removed, together with drainage of the abscess. The wound was closed in with silkwormgut sutures, and the patient did well up to some ten days afterwards, when a slight induration and prickly sensation developed in the upper angle. Upon opening this about two ounces of pus were released, and the temperature, pulse and headache accompanying the condition immediately disappeared. Hot-packs were then applied and the wound continued to drain for about a week, when the Bier treatment was applied, the discharge increasing for some twenty-four hours, then gradually disappearing in the course of the next forty-eight hours. The condition was apparently relieved, the wound healing by granulation, and with no other untoward symptoms.

The patient did not complain of the treatment in this instance, as was to be expected, for at the first cupping the instrument was applied somewhat more strongly than necessary, producing a discoloration of the skin. However, she learned to apply it, and did so herself the second time and several times following.

The result in her case was very gratifying, as her infection was one of the superficial layers, and not deep down into the abdominal cavity, as was first thought. However, no probing of the wound was allowed, and there was no necrotic tissue in this instance to be removed.

Case No. 10.

Mrs. B. presented herself, complaining of severe and sudden pains in the right lower quadrant of the abdomen. Diagnosis of a twisted

pedicle of an ovarian cyst was made. She had had trouble, however, for the last few years with mild attacks similar to the present, and a tentative diagnosis of chronic appendicitis was also entertained.

The usual median laparotomy was performed. An appendix deeply imbedded in adhesions, and with some pus, was found, as well as an ovarian cyst the size of an orange, and partly strangulated. It seemed wisest to make a counter-incision in the right iliac region, through which a drainage tube was passed down into the cavity formerly occupied by the appendix, and the median incision was then closed by the layer method. The median incision healed kindly, and there was considerable drainage for a week through the counter-opening, the drainage tube having been removed at the end of this time, and gauze substituted. This opening apparently refused to heal, once the edges being scraped and a few silkwormgut sutures introduced in order to approximate them. However, another week of hot-packs and irrigations followed, with still no appreciable effect upon the surfaces. Following the removal of the silkwormgut sutures, balsam of Peru was also attempted, and the Bier cup was then applied. During the period of the first few applications of the cup considerable serum and sero-purulent material was obtained, but after a week's application, three times daily, for ten minutes at a time, and not very strongly, the wound closed in by granulation, and the patient left the hospital entirely healed, and with a firm scar.

Of all the cases treated in this manner, this case appeared to be the most stubborn. It seemed as if the edges of the wound lacked the necessary tone for healing, and there was a question of possible tubercular condition of the area. However, the pathological report upset this theory.

Conclusion.

In conclusion, I would heartily advocate the use of the cupping method as one of inestimable value in such cases where there is an inflammatory condition, even utilizing it before the stage of the active pus process is present, as well as in those conditions where the tissues apparently lack the proper tone. Here the application seems to impart the vigor that is necessary in granulation. It is to be especially noted that in the active purulent stage, the hot-packs give great aid in helping to throw off necrotic particles, and keep up, to a material extent, the hyperemic condition supplemented by the application of the cup at definite intervals.

Concerning definite rules for the treatment, it can be said that there are none, save those that forbid of the severe application of the cup, such as to cause pain to the individual.

I would suggest that a large series of cases be tried with this treatment, and statistics collected, thus helping to establish certain definite lines for indication of the method.

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